

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES
Northern District

RECREATION USE SURVEY OF
BIG GRIZZLY CREEK, PLUMAS COUNTY
1994

Technical Information Report No. 95-1

Prepared under the direction of

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by

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This report was prepared to summarize information collected under Work Order 1501-0100 to document recreation and fishery enhancement provided by a revised operation of Lake Davis. This report has received only limited review; it is intended for internal use and should be considered preliminary and subject to revision.

May 1995

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SUMMARY

A survey of streamside recreation along Big Grizzly Creek, Plumas County, was conducted in 1994. The purpose of the survey was to estimate the amounts and types of recreation use and angler success occurring along the creek with augmented flow from Lake Davis through Grizzly Valley Dam. The stratified random sample survey combined roving use counts with interviews of recreators in order to gather information on recreation activities, visitor origin, and angler success.

There were an estimated 9,000 hours of recreation use on Big Grizzly Creek between April 30 and November 15, 1994. The most frequently observed activity in 1994 was sightseeing, apparently due to a large amount of available real estate adjacent to the public lands. Fishing, walking for pleasure, and relaxing were also common activities. About 38 percent of all visitors and 49 percent of all anglers lived in the northeast counties of California, mostly Plumas County. A large proportion of anglers and visitors lived in the City of Portola. Anglers caught an estimated 900 rainbow trout and a few brown trout in 2,200 hours of fishing.

INTRODUCTION

Big Grizzly Creek below Grizzly Valley Dam offered an opportunity to implement the Department of Water Resources' water management policy, adopted in 1975, which states, "Instream uses for recreation, fish, wildlife, and related purposes shall be balanced with other uses." When Grizzly Valley Dam began operation in 1966, streamflows in Big Grizzly Creek below the dam were increased and stabilized. Minimum flows were increased from about 0.5 cubic foot per second (cfs) to 8 cfs. Fishing and related streamside recreation were enhanced. An instream flow needs assessment later indicated that increasing flows to 20 cfs would further increase trout habitat over the post-project levels to near optimum levels without significant detriment to lake recreation (Haines, 1982).

On a trial basis, Grizzly Valley Dam began a revised operation in June 1982. The Department of Fish and Game and DWR agreed to further revise operating criteria and releases beginning in 1995. Monitoring downstream recreation use, fish populations, and trout catch will document changes to these resources caused by the modified flow release schedules.

This report describes the recreation use survey, creel census, and results for the 1994 trout season, April 30 to November 15. A separate report, prepared by the Department of Fish and Game, Contract Services Section, describes a fish population survey conducted in September 1994 (Brown, 1994).

Description of Study Area

Big Grizzly Creek is a major tributary of the Middle Fork Feather River (a designated National Wild and Scenic River) within the Plumas National Forest. The lowest 6.25 miles of the creek is below Grizzly Valley Dam and Lake Davis. From an elevation of 5,670 feet at the dam, the creek drops through

steep-walled canyons, flows through the eastern edge of Smith Peak State Game Refuge, crosses under Highway 70 about 2 miles east of the City of Portola, and joins the Middle Fork Feather River on the western side of Sierra Valley at an elevation of 4,870 feet (Figure 1).

Grizzly Road, which also crosses Highway 70, roughly parallels the creek, providing easy access to the mouth of the creek and to Lake Davis. About 3.8 miles upstream from the mouth is a dirt road, called Burnham Ranch Road, which provides public access to some of the more rugged areas of the creek. This road may be improved in the next few years; private lots are being developed adjacent to the public access area described below.

In 1986, DWR used Land and Water Conservation Funds to purchase a strip of land along Big Grizzly Creek to provide public fishing access. This created a public access area below the dam nearly three miles long, although portions of the surrounding area are privately owned and typically posted against trespass. Overall, about 4.25 miles of the 6.25-mile reach of Big Grizzly Creek below Grizzly Valley Dam is typically used by anglers and other recreationists. The remaining two miles of the creek are generally inaccessible and/or clearly posted against trespass.

Public access is prohibited at Walton's Grizzly Lodge, a camp for children at the "Grizzly Ice Pond". The camp uses the pond for fishing and swimming and the surrounding area for other camp activities. This use was not measured and is not included in our estimates.

Among other things, Big Grizzly Creek provides visitors with opportunities for trout fishing (predominantly rainbow trout), walking and hiking, flora and fauna study, relief from summer heat in the form of swimming and wading, and enjoyment of fall

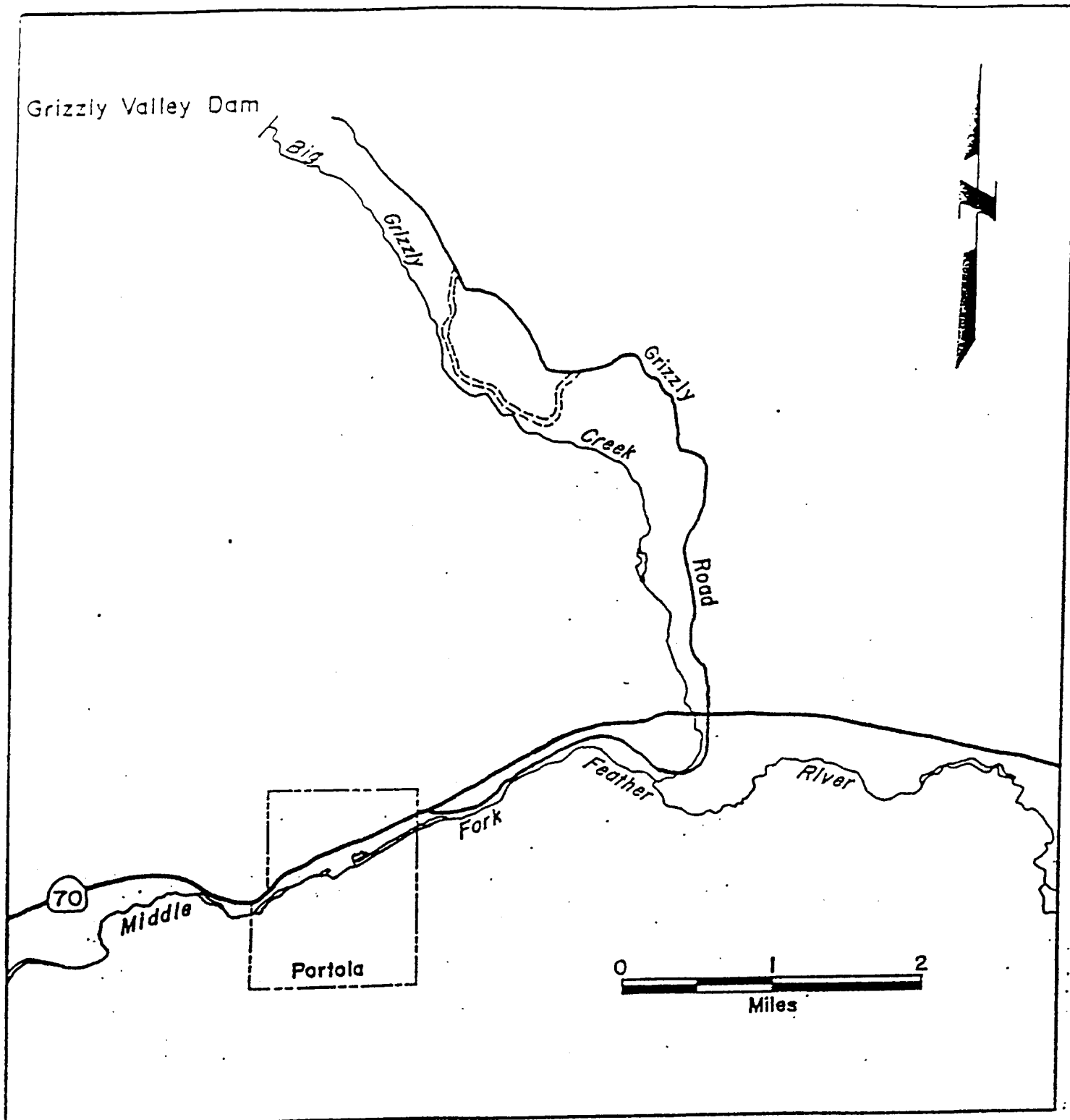


FIGURE 1. Big Grizzly Creek, Plumas County, 1994.

colors. In 1994, the area appeared to attract sightseers who were also looking at real estate adjacent to the study site.

The general area has a rich history of gold mining, farming and ranching, lumber production, and railroading. In recent decades, recreation use in Plumas County has increased greatly, with water-related uses a major attraction. Employment today is divided among services, government, timber harvesting, ranching, and farming.

Grizzly Valley Dam was built as part of the State Water Project in 1966. Originally planned to supplement irrigation in Sierra Valley, it was completed mainly to benefit reservoir recreation and the fishery downstream in Big Grizzly Creek, and to provide domestic water to the City of Portola. Releases for recreation, fish, and wildlife are based on the water surface elevation on May 1, consequently releases have not exceeded 10 cfs since 1986. In addition to the releases for downstream fisheries and water rights, the reservoir is operated to prevent spill. This requires large releases of up to 250 cfs in the early spring of some years (DWR 1974), although the reservoir did not spill after 1986 because of prolonged drought conditions (Lake Davis finally filled again in May, 1995).

METHODS

Recreation Use Counts

Use counts were made on randomly selected dates within nine survey strata using the optimum allocation method described by Abramson and Tolladay (1959). Twenty-seven days of the 200-day period from April 30 through November 15, 1994, were surveyed; both days of the opening weekend of trout season, 4 of 9 holiday weekend days, 11 of 139 weekdays, and 10 of 50 weekend days. Five one-hour counts of recreation use were made in the study area each day at regular periods, scheduled according to the number of daylight hours (Appendices I and II). An additional (twenty-eighth) survey day was scheduled in November, however, extremely inclement weather precluded travel. Use was assumed to be zero on this date.

The surveys were made from vehicle or on foot, as necessary, to check access and recreation sites. Recreationists (and their vehicles) were counted and recorded by recreation activity. The five daily counts were totaled and multiplied by factors that accounted for recreation use in the daylight periods not counted. Similarly, the resulting daily figures were expanded to estimate total recreation hours for all days in each stratum. Adding the stratum totals provided an estimate of recreation hours for the study period.

Creel Census

Anglers along Big Grizzly Creek were contacted on 27 days to determine fishing success. The county of residence and length of time spent fishing so far that day were recorded for each angler contacted. Fish censused were counted, measured (fork length to nearest 0.5 cm), and identified to species.

To determine total catch, the catch per hour was multiplied by estimated hours of fishing for each stratum and the totals for each stratum were summed. Total weight of trout caught was calculated from estimated total fish caught and application of the length-weight relationship formula for Big Grizzly Creek trout (Brown 1994).

RESULTS

Recreation Use

Total recreation use on Big Grizzly Creek was estimated at 9,000 recreation hours ($\pm 2,400$ hours) for the period April 30 to November 15, 1994. Counts of people along Big Grizzly Creek indicated that, overall, sightseeing was the major activity, followed by fishing, miscellaneous uses, walking, and relaxing (Table 1).

Table 1. Recreation Hours by Activity
Big Grizzly Creek, 1994

	Recreation Hours	Percent
Sightseeing	2,300	25½
Fishing	2,200	24½
Walking	1,000	11
Relaxing	1,000	11
Swimming and beach use	600	7
Miscellaneous/other*	1,900	21
Total	9,000	100

* Includes picnicking, children playing, camping, shooting, and off-highway vehicle use.

Seventy-three interviews were conducted this year, representing 153 people. The interviews revealed what people said they did during their visit. About 55 percent of the visitors to Big Grizzly Creek said they fished, followed by relaxing (41 percent), sightseeing (27 percent), swimming/wading (18 percent), beach use (16 percent), picnicking (7 percent), walking for pleasure (8 percent), and miscellaneous other activities (8 percent). These percentages add up to more than 100 percent because many people took part in more than one activity.

About 70 percent of the interviewed visitors were day users (i.e., returned home at night), and 30 percent stayed overnight somewhere in the area (usually at Lake Davis or a commercial facility in Portola). Only one party was observed camping along the creek (not strictly legal), but they were not available for interview. Other campers have been observed in past years. Visitor origin was predominantly from the northeast counties (38 percent). Visitors from out of state totaled 31 percent of all users. Bay Area visitors made up 12 percent while 10 percent came from the Sacramento Valley.

Creel Census Data and Angler Success

During the 1994 trout season, 89 anglers were contacted. They had fished 158 hours, with an observed catch of 60 rainbow trout (Oncorhynchus mykiss) and 2 brown trout (Salmo trutta). In addition, 157 trout were reported to have been caught and released.

Total angling use was estimated at 2200 hours (± 800 hours) or 1400 angler days, with an estimated take of 900 rainbow trout and perhaps 30 brown trout. Based on trout reported caught and released, an additional 2,300 trout were estimated to have been caught and released.

The mean length of rainbow trout measured during 1994 was 25.9 cm (10.2 in) with a range of 21.0 to 30.0 cm (8.3 to 11.8 in) (Appendix III). Based on the length-weight relationship determined by Brown (1994), an estimated 400 pounds of rainbow trout were caught. The two brown trout creel were the largest fish observed, measuring 37.0 and 41.0 cm fork length.

Big Grizzly Creek angler origin (Figure 3) was predominantly from the northeast counties (41 percent). Anglers from

Nevada, mostly Reno and Sparks, totalled 32 percent. Twenty-three percent of anglers came from Sacramento Valley Counties, and 2 percent each from North Coast and San Francisco Bay counties.

About 57 percent of the anglers fished with lures, about 16 percent with bait, about 9 percent with flies, and about 18 percent used more than one type of terminal gear during their effort.

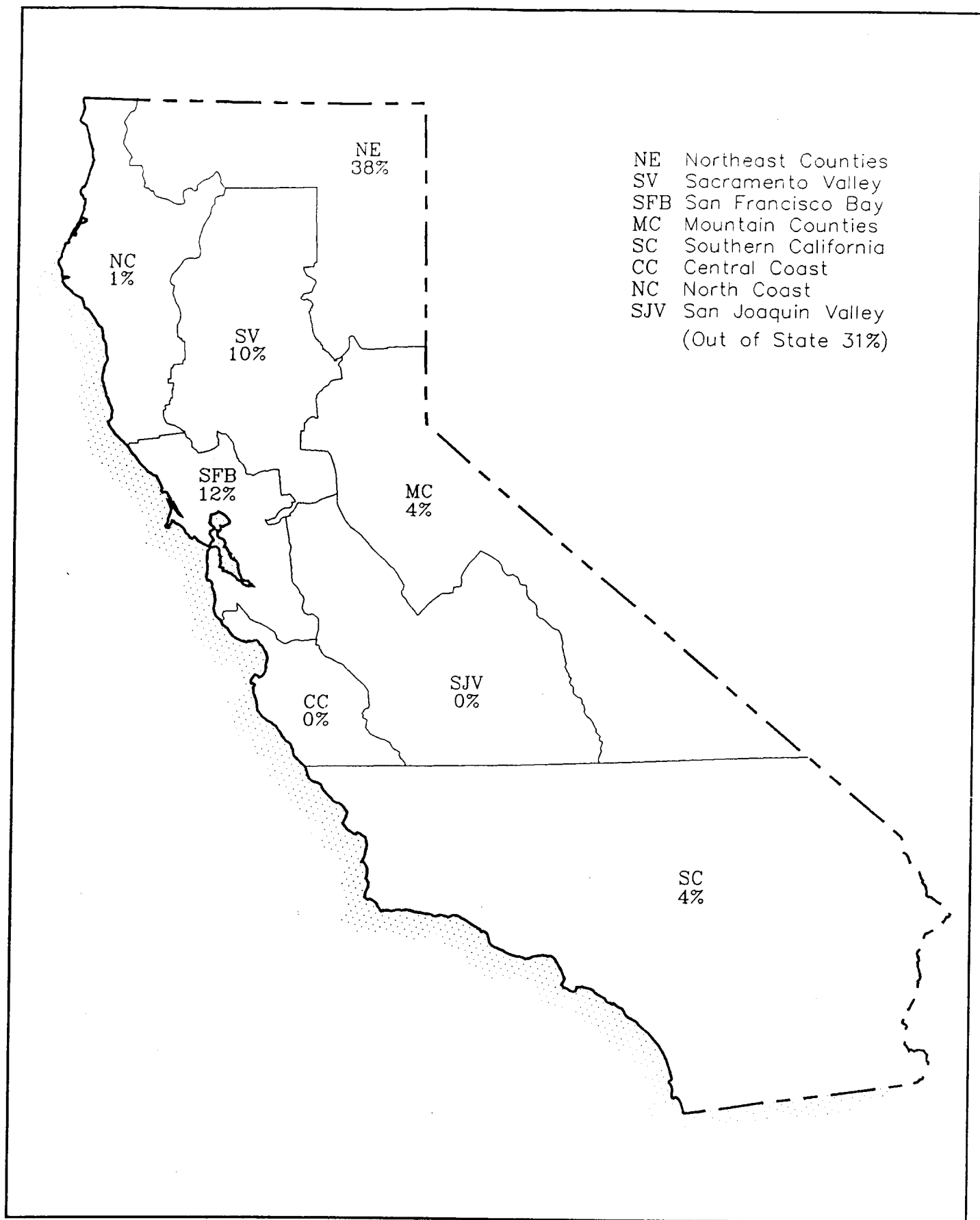


Figure 2 – Big Grizzly Creek Visitor Origin by County Groups
1994

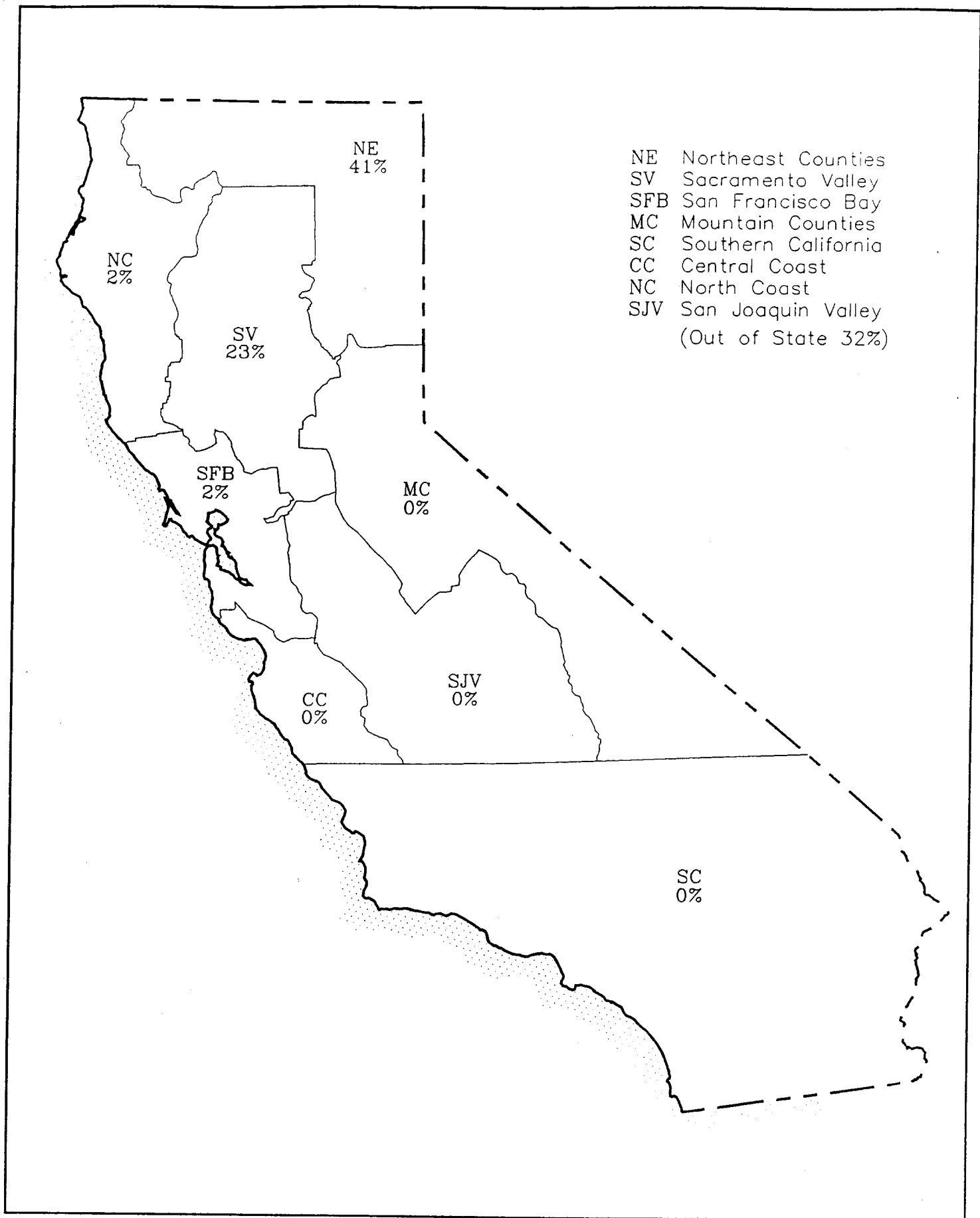


Figure 3 – Big Grizzly Creek Angler Origin by County Groups
1994

DISCUSSION

Counts and Creel Census

Most people using the creek were readily observed during the use counts. Vehicle access points were checked on each count, and people were found for nearly all vehicles. Vehicles of U.S. Forest Service and DWR workers and other non-recreationists are sometimes parked along the road, normally making vehicle counts a poor index of recreation use. About 7 percent of the estimated fishing use was represented in the creel census.

Comparison With Use in 1986 and 1991

Comparison of the 1994 data with previous surveys conducted on Big Grizzly Creek in 1986 and 1991 shows a significant recent rise in total recreation use. Patterns of recreation use and fishing at Big Grizzly Creek apparently have also changed. The recreation survey reflected much higher use than in 1986 or 1991; Table 2 summarizes differences observed over the years. Five years of drought resulting in low stream flows, and development along Big Grizzly Road and along the creek, may have had significant effects on the amount of recreation use along the creek. Recently, abundant listed real estate has attracted people who apparently also sightsee while looking at property and lots.

During the 1994 trout season, anglers fished an estimated 2,200 hours, a slight decrease in angling use. The estimated catch of 900 rainbow trout and 30 brown trout was substantially lower than in 1991, however, the mean length in 1994 (10.4 in) was significantly greater than that of 1991 (8.4 in). All strata showed some increase in fishing use.

Table 2
Estimated Recreation Hours by Activity,
Big Grizzly Creek 1986, 1991, 1994

<u>Activity</u>	<u>1986</u>	<u>Year</u> <u>1991</u>	<u>1994</u>
Fishing	2,900	800	2,200
Swim/Wade	800	1,000	600
Relaxing	200	200	1,000
Sightseeing	30	200	2,300
Walking	20	400	1,000
Miscellaneous/Other	450	1,100	1,900
Totals	4,400	3,700	9,000

* Includes: picnicking, children playing, camping, shooting, bicycling OHV-use.

ACKNOWLEDGEMENTS

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Thanks to Michael Serna for preparing the figures and Lori Miles who typed the text and tables.

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APPENDIX I

RECREATION SURVEY SCHEDULE FOR BIG GRIZZLY CREEK, PLUMAS COUNTY APRIL 30, 1994, TO NOVEMBER 10, 1994

Date	Holiday (HD) Weekend (WE) Weekday (WD)	Survey Stratum
April 30	WE	I
May 1	WE	I
May 5	WD	IV
May 27	WD	IV
May 22	WE	III
May 28	HD	II
May 29	HD	II
June 3	WD	IV
June 4	WE	III
June 7	WD	IV
June 11	WE	III
June 18	WE	III
June 29	WD	IV
July 2	HD	IX
July 7	WD	VI
July 14	WD	VI
July 17	WE	V
August 9	WD	VI
August 13	WE	V
August 20	WE	V
August 21	WE	V
August 22	WD	VI
September 3	HD	IX
September 25	WE	VII
September 30	WD	VIII
October 23	WE	VII
November 10	WD	VIII

APPENDIX II

1994 USE COUNT SCHEDULE FOR BIG GRIZZLY CREEK

<u>Date</u>	<u>Daylight Hours</u>	<u>Use Count</u>		<u>Creel Census Time (approx.)</u>
		<u>Count</u>	<u>Time</u>	
April-August PDT	16-1/2	1st	0700-0800	0800-1300
		2nd	1000-1100	1400-1900
		3rd	1300-1400	
		4th	1600-1700	
		5th	1900-2000	
September PDT	14	1st	0730-0830	0830-1230
		2nd	1000-1100	1330-1730
		3rd	1230-1330	
		4th	1500-1600	
		5th	1730-1830	
October PDT	13	1st	0800-0900	0900-1230
		2nd	1000-1100	1300-1700
		3rd	1230-1330	
		4th	1500-1600	
		5th	1700-1800	
November PST	12	1st	0730-0830	0830-1130
		2nd	0930-1030	1230-1530
		3rd	1130-1230	
		4th	1330-1430	
		5th	1530-1630	

APPENDIX III

Length—Frequency of Censused Rainbow Trout
Big Grizzly Creek, 1994

